

RIVERS AND FLOODS.

By H. C. FRANKENFIELD, Meteorologist.

The heavy rains that fell in the South directly after the middle of the month were followed by moderate floods in the rivers of the Santee and Mobile systems, and there was also an equally moderate flood in the lower Apalachicola River of Florida. There were no other floods worthy of special mention. Warnings were issued whenever and wherever necessary and there were no losses except of lumber to the value of \$3,000 in the Tombigbee system of Alabama. Here also the value of property saved by the warnings was \$10,300.

Flood stages during December, 1922.

River.	Station.	Flood stage.	Above flood stages—dates.		Crest.	
			From—	To—	Stage.	Date.
ATLANTIC DRAINAGE.						
Santee.....	Rimini, S. C.	<i>Feet.</i> 12	21	26	<i>Feet.</i> 13.6	25
	Do.....	12	31	(*)	12.0	31
	Ferguson, S. C.	12	22	28	13.1	26
Saluda.....	Pelzer, S. C.	7	18	18	7.5	18
Broad.....	Carlton, Ga.	11	18	18	12.0	18
EAST GULF DRAINAGE.						
Apalachicola.....	Blountstown, Fla. ...	15	21	24	16.2	22-23
Coosa.....	Lock No. 4, Lincoln, Ala.	17	18	20	17.5	18-19
Etowah.....	Canton, Ga.	11	17	18	16.6	18
Tombigbee.....	Lock No. 4, Demopolis, Ala.	39	21	24	42.8	23
Black Warrior.....	Lock No. 10, Tuscaloosa, Ala.	46	18	19	51.5	18
MISSISSIPPI DRAINAGE.						
Tennessee.....	Knoxville, Tenn. ...	12	18	18	12.4	18
PACIFIC DRAINAGE.						
Mokelumne.....	Bensons Ferry, Calif.	12	15	15	12.1	15
COLUMBIA BASIN.						
Santiam.....	Jefferson, Oreg.....	10	27	27	10.8	27

* Continued into January, 1923.

INFLUENCE OF WEATHER ON CROPS AND FARMING OPERATIONS, DECEMBER, 1922.

By J. WARREN SMITH, Meteorologist.

More than the normal amount of rain fell during December, from the Ohio Valley and Maryland southward and also in most far western and northwestern districts. The amounts, however, were considerably below normal in the Lake region and between the Mississippi Valley and the Rocky Mountains. The rain-

fall during the first half of the month in the Southeastern States was beneficial to winter-truck crops, but farm work was considerably interrupted, and at the same time the rather frequent rainfall in the Middle Atlantic Coast States materially replenished the water supply in that area. With the cessation of rains in southern Florida, the soil dried out rapidly and planting became active.

Severely cold weather with frequent, and in some places heavy, snows, prevailed in the Northwestern States during the weeks ending December 12 and 19, a condition which was generally unfavorable for stock and caused outdoor operations to be largely suspended. The snow drifted badly in parts of the northern Great Plains and traffic was impeded by snow in Montana and in some higher northern Rocky Mountain districts. There was some shrinkage of stock in Wyoming and heavy feeding was necessary in the northwestern grazing districts, but no material loss of stock was reported. The last 10 days of the month were unseasonably mild in the Northwestern States, with a rapid melting of snow, and the lower ranges were mostly free from snow cover in the central Rocky Mountain and north Pacific States at the close of the month.

The ground was generally bare of snow throughout the principal winter-wheat belt, and low temperatures prevailed during the middle portion of the month, but wheat was not materially damaged in any section. Substantial rains fell in most portions of the eastern half of the belt during the first two weeks of the month, which were beneficial for winter cereals and the increased moisture the latter part was very helpful in the Middle Atlantic Coast States. It continued dry, however, in the more western and southwestern portions of the winter-wheat belt where the crop was generally in poor condition. The soil was mostly in good condition to absorb the heavy snowfall in the more Northwestern States and substantial benefit resulted to wheat in that area; much wheat sown late in dry soil in eastern Washington germinated satisfactorily. The ample soil moisture in the South Atlantic and East Gulf States gave conditions satisfactory for winter grains in that area.

Citrus fruit matured slowly in Florida, owing to the prevailing warm weather, until the latter part of the month when the cooler weather favored more rapid development while, at the same time lower temperatures were favorable in Arizona. The weather was generally favorable for the development of oranges and lemons in California and navel oranges were ripening, and there was some picking the latter part of the month. There was some lack of moisture for strawberries in Florida but in general the crop made satisfactory progress.